



Director's Rule 27-87

Applicant CITY OF SEATTLE DEPARTMENT OF CONSTRUCTION AND LAND USE	Page	of	Supersedes
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	Code and Section Reference Section 306 - Seattle Building Code, Chapter 22.100 SMC		
Subject CONTINUOUSLY APPROVED CONCRETE DESIGN MIXES: REVIEW CRITERIA AND PROCEDURE	Type of Rule Code Interpretation Review Criteria		
	Ordinance Authority 3.06.040		
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BUILDING/PROCEDURAL REQUIREMENTS /TECHNICAL REQUIREMENTS	Holly Miller	2/3/88	

PURPOSE

Exception #5 of Item 1 of Section 306(a) of the Seattle Building Code allows for the continuous approval of concrete design mixes. This rule establishes minimum requirements and procedures for the continuous approved concrete design mix program. Compliance with this rule can allow for the elimination of special inspections in the ready-mix plant.

DEFINITIONS

Design mixes - Concrete mix proportions established by conformance with Seattle Building Code, Section 26704(d), Standard Deviation of Field Test Results, or (e) 3-Point Curve Based on Results of Laboratory Trial Mixes.

Continuously approved design mixes - For the purpose of achieving continuous approval status "frequently used" shall mean that the design mix has been used on a minimum of 3 projects within the past 12-month period of time and that there are a minimum of 10 sets of cylinder tests total from these projects, or the mix has been used on 1 project within the past 12-months and there are a minimum of 30 sets of cylinder tests from that 1 project. All tests shall be from independent testing laboratories.

Good consistency history of a concrete producer - A concrete producer who's average psi/lb of cement is not less than 0.7 psi/lb. of cement of the overall average of all concrete producers, and who has maintained that consistency in a running average for the past 3 months, and who has an average standard deviation for all concrete produced of 600 psi or less, shall be considered to have a good consistency history.

NOTE: The psi per pound of cement and standard deviation used to establish a good consistency history of a concrete producer shall be those recorded by DCLU's concrete technician from the compression test results filed with DCLU by independent testing laboratories. These test reports are maintained continuously by DCLU's concrete technician and used to monitor ongoing performance of mixes and producers, including the mixes granted "continuously approved" status.

CONTRACTOR'S RESPONSIBILITY

It shall be the responsibility of the general contractor to obtain the approval of the structural engineer of record for the project prior to using any concrete mix for any structural purpose. When a continuously approved design mix is to be used on a project, it shall be the general contractor's responsibility to affix a copy of the mix to the back of the page of the approved structural plans which contain the "general notes." This copy is for the use of the special inspector and shall be so affixed as to remain in place throughout the construction phase of the project.

APPLICATION FOR CONTINUOUSLY APPROVED DESIGN MIXES

In order to submit mixes for continuously approved status, the concrete producer must be certified by the City of Seattle to provide concrete for projects within the Seattle city limits. Application may be made by submitting a request for such, including the following information:

1. Batch weights per cubic yard.
2. Brand and type of cement (if more than one brand is used, list all).
3. Aggregate source (if more than one source is used, list all) and state Department of Transportation's pit designation number.
4. Specific gravities of aggregates.
5. Recent sieve analysis on fine and coarse aggregates (samples and tested within the last 30 days).
6. Water/cement ratio.
7. Brand and type of admixture(s). Note: For Fly Ash, also list source (if more than once source is used, list all).
8. Air content (if air entrained).
9. Yield.
10. Design strength.
11. Concrete test reports shall be submitted at the time of application (showing compliance with frequency of use requirement defined above) if they are not on file with DCLU. (Example: Reports from projects outside the Seattle city limits.)

When a certified concrete producer meets the good consistency history as defined above, when a concrete mix they produce meets the frequently used criteria as defined above, and when prior use proves that the strength of the concrete mix meets or exceeds that necessary to assure it will reach a given strength, the concrete producer may make application to the City of Seattle, DCLU, to have continuous approval status granted for the concrete mix. The application shall be accompanied by all the information listed above, and shall include the payment of a fee equal to a 1/2 hourly charge as established in the Permit Fee Ordinance.

The history of a concrete mix will be considered to assure that it will reach a given strength when not more than 2 percent of all historical strength tests fall below designated strength (at 28-days for type I or II cement, at 7-days for type III cement) and that no test falls 500 psi or more below designated strength.

ELIGIBLE MIXES

Mixes containing the following materials shall be eligible for the continuous approval status:

Cements: Types I, II and II Portland cement.

Admixtures: Types A, B, C, D, and E, as defined by ASTM C494, Pozzolan or Fly Ash as defined by ASTM C618, and air entraining mixtures as defined by ASTM C233.

Aggregates: Normal weight aggregates meeting the grading and other requirements of ASTM C33.

Mixes containing materials other than those listed above shall not be eligible for continuous approval status.

Continuous approval status shall not be granted for strength requirements in excess of 6,000 psi.

Flowable concrete (concrete which has a measured slump in excess of 6 inches) when the flowability is water-induced, shall not be eligible for continuous approval status.

APPROVAL

Approval is valid for one year and may be renewed annually provided the mix and the producer continue to qualify.

Approval for these mixes will be based upon prior use history and the consistency and performance of the concrete producer.

Continuously approved mixes do not have to be approved by the Department of Construction and Land Use (DCLU) on a job-to-job basis prior to use, and they do not require special inspection in the batch plant.

Note: The continuous approval does not qualify a mix for use on a particular project or in a particular situation. Suitability of the mix for the specific project requirements and application shall be determined by the structural engineer (or architect if applicable). It shall be the responsibility of the contractor to obtain the structural engineer's/architect's approval prior to use.

REVOCATION

Continuous approval is valid until revoked by the Building Official or until the concrete producer requests withdrawal of the mix. The Building Official may revoke approval if the yearly renewal fee is not paid, if there is a change in materials used, conditions of equipment, or quality control by the concrete producer which adversely affects the strength or other properties of the concrete, or if there is a drop in the statistical averages of the concrete producer below the minimums required for continuous approval.

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